

**A Discrete Multi-Tone (DMT) System and Method that Communicate a Data  
Pump Data Stream Between a General Purpose CPU and a DSP via a  
Buffering Scheme**

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Abstract of the Disclosure

The apparatus and method herein splits the function of a digital subscriber line (DSL) modem data pump between a digital signal processor (DSP 106) and a general purpose host central processing unit (CPU 102). The  
10 DSP (106) handles all front end data pump processing such as interface to an analog front end (108 and 110), FFT processing, FEQ processing, QAM decoding, and bit formatting. The host CPU (102) handles all back end data pump processing such as DMT tone deordering, data deinterleaving, error detection and correcting, bit descrambling, CRC processing, and the like. In  
15 order to enable the DSP (106) and the CPU (102) to communicate with each other effectively, buffers (132) under the control of specialized buffer management methodology (FIG. 4) are used.